

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



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Applicant's or agent's file reference SPE 02/06	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07943	International filing date (day/month/year) 18.07.2003	Priority date (day/month/year) 23.07.2002
International Patent Classification (IPC) or both national classification and IPC B65D30/00		
Applicant SOLVAY POLYOLEFINS EUROPE-BELGIUM (S.A.)		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  20.01.2004	Date of completion of this report  28.10.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Droghetti, A Telephone No. +31 70 340-4143 

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**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-5 as originally filed

**Claims, Numbers**

1-7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-7
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

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**Re Item V**

Reference is made to the following documents:

D1: US A 4680330  
D2: US A 3454455  
D3: EP A 0109512  
D4: US A 4911985  
D5: EP A 0339990  
D6: US A 5849394

**1. Novelty (Art. 33(2) PCT)**

The subject-matter of claims 1-7 is new in view of the prior art documents D1-D6. The reasons are as follows.

The term "net" according to the description refers to any sheet, woven or non-woven, having regular apertures or perforations (in the present application, page. 1, l. 5-6).

**1.1.** D1 discloses a composition for cling films with improved adhesion properties comprising low density polyethylene (e.g. LLDPE) and polyisobutene (having viscosity and  $M_n$  as claimed in the present application) as cling or tackifying agent (search report).  
No sheets having apertures and perforations and no HDPE are mentioned in D1.

Therefore the subject-matter of claims 1-7 is novel in view of D1.

**1.2.** D2 discloses reticular structures from perforated sheets having apertures, and prepared from a composition comprising HDPE and polyisobutene (search report).  
The amounts of the two components are not specified and no  $M_n$  and viscosity of PIB as claimed are disclosed in D2.  
Thus the subject matter of claims 1-7 is novel in view of D2.

**1.3.** D3 discloses polymer film and film webs having good adhesion and cling properties and comprising a blend of LDPE and polyisobutene (with the same  $M_n$  as claimed) as tackifying agent (search report).  
No HDPE is mentioned in D3.  
Thus the subject-matter of claims 1-7 is novel in view of D3.

**1.4.** In D4 a packaging film having improved tear and puncture resistance comprises a blend of HDPE and polyisobutene as claimed and a filler (search report).  
No sheets having apertures and perforations as claimed are mentioned.

Thus the subject-matter of claims 1-7 is novel in view of D4.

**1.5.** D5 and D6 discloses compositions for packaging films and materials presenting good adhesion properties or heat sealability and comprising HDPE and polyisobutene as claimed.  
No sheets having apertures and perforations as claimed are mentioned in D5 and D6.

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Thus the subject-matter of claims 1-7 is novel in view of D5 and D6.

**2. Inventive Step (Art. 33(3) PCT)**

The subject-matter of claims 1-7 does not involve an inventive step for the following reasons.

**2.1.** D2, which is considered the closest prior art, discloses reticular structures from sheets having apertures and perforations (cl. 5, as described in the the present application, page. 1, l. 5-6) and comprising a blend of high density polyethylene and polyisobutene (search report).  
The polyisobutene is used as plasticizer.

The present application differs from D2 in that the amounts of both components are defined and in that the polyisobutene is used as tackifying agent and is present with Mn and viscosity in defined ranges as claimed (claims 1-4,7).

In the present application the examples according to claim 1 and 2 (ex.1-3, page 4-5) illustrate that an increasing amount of PiB falling in the claimed range increases the peel and lap cling values of HDPE compositions and as a consequence the tackiness of the film (page 5, lines 6-8).  
The problem to be solved by the present invention may therefore be regarded as the preparation of a net having increased tackiness.  
The solution proposed in claims 1-4,7 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

The use of PiB as claimed in cl. 1-4,7 is regarded as a normal option to include in polyethylene compositions for packaging requiring improved adhesiveness.  
Independent claim 7 cannot be considered as inventive because the use of polyisobutene for improving the adhesiveness of polyethylene (in particular HDPE) packaging compositions is well known in the art (in D1,D3-D5).  
In D6, a wrap packaging material comprising a blend of ethylene polymers (e.g. HDPE) and polyisobutene as claimed is disclosed. The cling and adhesion properties of the packaging material are improved.  
No net is explicitly mentioned in D1, D3-D6, but the enhanced adhrence provided by the PiB can be applied for simple packaging films as well as for packaging nets as described in the present application (that is sheets with regular perforations and apertures), without involving an inventive step (cl. 7).  
Thus the subject-matter of claim 7 is not inventive.

In documents D1, D3-D6 even the amount of PiB is in the same range as claimed (cl. 1,2) and furthermore it presents Mn and viscosity as claimed (cl 3-4)  
In the present application, neither examples nor comparative examples illustrate the technical effects or advantages over the prior art deriving from the use of the a PiB having Mn and viscosity as claimed above. Therefore it is not clear whether these features contribute to any technical effect or whether they have been chosen arbitrarily.

**2.2.** Dependent claim 6 does not appear to contain any additional features which, in combination with the

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features of any claim to which it refers, meet the requirements of the EPC with respect to inventive step, the reasons being as follows.

Even if neither in D2, the closest prior art, nor in documents D1, D3-D6 the cooling rate is disclosed or explicitly defined as in cl. 6, in the present application there are no examples or comparative examples illustrating the technical effects deriving from the use of this technical feature.

Therefore it is not evident whether this feature contributes to any technical effect or whether it has been chosen arbitrarily.

As long as no further explanations are available about the net composition and the process for producing the same, inventive step cannot be assessed for claim 6.

**2.3.** The same consideration could be done for the use of HDPE in packaging compositions where stiffness is required, which also comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can be readily contemplated in advance (in D4 and D5).

**2.4.** Thus the subject-matter of claims 1-7 is not inventive in view of documents D1-D6.

**3.** The subject-matter of claims 1-7 meets the requirements of **Article 33(4) PCT**, with regard to **industrial Applicability**.